STATUS IN ZINC, MAGNESIUM, INSULIN AND RESISTIN IN A GROUP OF OBESE MEN WITH TYPE 2 DIABETES

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**Abstract**

**Introduction:** Obesity is the main risk factor which influences the appearance of type 2 diabetes. Thus, the increase of the prevalence of obesity throughout the world is associated with a parallel rise in the development of type 2 diabetes. This association engenders alterations of important trace elements such as zinc and magnesium with an insulin resistance manifested by a high plasma resistin levels. **Objective:** To assess the plasma levels of lipid parameters, resistin, insulin, zinc and magnesium in a group of obese men with type 2 diabetes compared to control subjects in order to find possible correlations between these different parameters. **Methods:** This is a study "Case / control" in which we involved 30 obese men with type 2 diabetes recruited from the department "C" of Nutritional Diseases and Therapeutics dietetics at the National Institute of Nutrition. The control group consists of 30 men. The men of this group were matched by age to those in the obese group. They were recruited from volunteers accompanying the patients in the external consultation of Diabetology and Metabolic Diseases at the National Institute of Nutrition. Each subject received an interrogation specifying the general characteristics, anthropometric measurements, a fasting blood sample. **Results:** Plasma zinc levels in obese type 2 diabetic subjects (88.77 ± 0.07µg / dl) is significantly (p= 0.012) lower than that of control (93.3±8.18µg/dl). Plasma magnesium levels in obese type 2 diabetic subjects (21.07±2.43 mg/l) is significantly (0.027) lower than that of control (22.73±3.21 mg/l). In contrast, plasma résistin levels in obese type 2 diabetic subjects (10.85 ± 1.47 ng / ml) is higher than that of control (4.43 ± 0.92 ng / ml). Plasma zinc and magnesium levels are negatively correlated with body mass index (respectively r = -0.79, and r = -0.83). Whereas, plasma résistin levels are positively correlated with body mass index. Significant negative correlations between plasma zinc levels and plasma résistin levels (r = -0.72) and between plasma magnesium levels and plasma résistin levels (r = -0.73) were demonstrated. A negative correlation was also noted between these trace elements and the glycemia. The analysis of food consumption survey data noted an excessive daily calorie intake (3288.13 ± 728.059 kcal / d) in the obese diabetic type 2. **Conclusion:** The association obesity- type 2 diabetes is accompanied by a disturbance of zinc and magnesium status and an abnormal metabolism of these trace elements may play a role in the pathogenesis of type 2 diabetes associated with obesity. High plasma résistin level in obese subjects is also a factor leading to insulin resistance and type 2 diabetes. **Keywords:** Obesity, type 2 diabetes, Insulin Resistance, Zinc, Magnesium, Resistin.
References


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